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ABSTRACT

This study examined age and gender differences in global, academic, athletic, and social self concepts in a group of 311 middle and high school students (ages 12-18) attending science, mathematics, or computer science classes at a summer program for the academically talented. The self-concept scores were obtained from the Rosenberg Self-Esteem Scale and the Self-Perception Profile for Adolescents. Factors investigated were athletic competence, scholastic competence, and social competence. Results indicated a significant main effect for gender, but no age effect was found. Males obtained significantly higher scores on global and athletic self-concepts, whereas females obtained significantly higher scores on social self-concept. No differences were found on academic self-concept. Attached tables and graphs illustrate the research data. (Contains 25 references.) (Author/CR)

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Age and Gender Differences in Global, Academic, Social, and Athletic Self-Concepts in Academically Talented Students

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Abstract

This study examined age and gender differences in global, academic, athletic, and social self-concepts in a group of 311 middle and high school students attending science and mathematics classes at a summer program for the academically talented. The self-concept scores were obtained from the Rosenberg (1965) Self-Esteem Scale and the Self-Perception Profile for Adolescents (Harter (1988). A MANCOVA revealed a significant main effect for gender, but no age effect was found. Subsequent discriminant function analyses indicated that males obtained significantly higher scores on global and athletic self-concepts whereas females obtained significantly higher scores on social self-concept. No differences were found on academic self-concept.

Age and Gender Differences in Global, Academic, Social, and Athletic Self-Concepts in Academically Talented Students

Self-concept variables have had a long history in the psychological and educational literature and in the public eye. Low self-esteem has been associated with depression, eating disorders, self-destructive actions, and antisocial behavior (Basic Behavioral Science Task Force of the National Advisory Mental Health Council, 1996). Further, the state of California commissioned a task force on self-esteem to the tune of $700,000. Many studies have also examined the relationship of self-concept variables to academic functioning. Does high self-concept promote school success, does success in school lead to high self-concept, or is the relationship between self-concept and academic success more complicated than indicated by these two questions? Further, does self-concept differ across ages and genders?

Mwamwenda (1991) examined gender differences in global self-esteem in 97 South African high school students using the Canadian Self-Esteem Inventory (Battle, 1976) and found no gender differences. Wade (1991) measured global self-esteem on two separate occasions two years apart in a sample of 1153 high schoolers. Using an unpublished measure whose items were described as being "very similar to those appearing on the Rosenberg (1965) self-esteem scale," he found significant differences favoring males at time 1 but not at time 2. Mullis, Mullis, and Normandin (1992) found no significant gender differences in 1178 midwestern high school students using the Coopersmith global self-esteem measure, and Yong (1992) found no gender differences in a group of 169 gifted middle school students on the Self-Concept Scale for Gifted Children. However, Hagborg (1993a), with a sample of 150 high school students, found that males had significantly higher global self-esteem scores on the Rosenberg scale.

The findings with regard to age and global self-esteem have also been mixed. Hagborg (1993a) found no significant grade differences in Rosenberg self-esteem scores of high school students although he did report a small positive correlation between self-esteem and grade level. Lea-Wood and Clunies-Ross (1995) found no age differences on Coopersmith scores in a group of middle-school aged gifted and non-gifted Australian girls. Mullis et al. (1992) reported on a study

using a cross-sequential design. Using the Coopersmith, they measured self-esteem in each of three years of high school. Although they found no cross-sectional differences in self-esteem, there were significant differences when the data were examined longitudinally, with students obtaining higher scores as their advanced through the grades.

The lack of consistent results associating global self-concept with gender, age, and other variables led to a reexamination of the nature of self-concept variables in general. Crain and Bracken (1994) argued that many of the inconsistencies in the self-concept literature stemmed from treating self-concept as an unidimensional rather than a multidimensional variable (e.g., Coopersmith, 1967, Rosenberg, 1965). Crain and Bracken (1994) also pointed out a number of other problems with the self-concept literature, including the norming of self-concept instruments on small geographically restricted samples and limited information on the reliability and validity of the instruments being used. These sentiments are echoed by Hoge and Renzulli (1993) and Marsh, Chessor, Craven and Roche (1995), and have led to studies of gender and age differences in self-concepts in specific domains using instruments with stronger psychometric properties.

Widaman, MacMillan, Hemsley, Little and Balow (1992) examined the self-concepts of 1140 eight graders from Southern California using the Self Description Questionnaire II (Marsh & Barnes, 1982), an instrument that provides a general self-concept score and ten domain scores. In this study, males obtained significantly higher scores than females on general self-concept, emotional stability, parent relations, physical ability, physical appearance, and opposite sex relations, whereas females obtained significantly higher scores than males on reading, same sex relations, and honesty/trustworthiness. Hagborg (1993b) reported that males obtained significantly higher scores than females on the athletic and physical appearance subscales of Harter's Self Perception Profile for Adolescents (Harter, 1988) whereas females had higher scores on the close friendship subscale.

Jackson, Hodge, and Ingram (1994) examined gender and age differences in high school and college students using the Self Description Questionnaire III (Marsh & O'Neill, 1984). They found that males obtained higher scores on females on the general self-concept, emotional stability, athletic activity, physical appearance, and mathematics subscales, whereas females obtained higher scores on

the verbal, academic, other sex relations, religion and honesty subscales. The high school students outscored the college students on the mathematics subscale but college students obtained higher scores than high school students on the academic, physical appearance, parent relations, other sex relations, and honesty subscales.

Crain and Bracken (1994) examined 2188 children and adolescents from 10 to 18 years old using the Multidimensional Self-Concept Scale which consists of six domains (social, competence, affect, academic, family and physical). Although they found a few significant differences (e.g., males were significantly higher on physical self-concept), they noted that the differences in the study, "while statistically significant, [did] not appear to be qualitatively or practically meaningful" (Crain & Bracken, 1994, p. 507). They further stated that there is little evidence at this time of "meaningful, systematic differences in domain-specific and global self-concept as a function of age, race or gender" (p. 507), but did concede that further investigations are necessary.

Studies of gifted youth have not clarified the concerns mentioned above. In a review of the literature linking giftedness and self-concept, Hoge and Renzulli (1993) found that gifted students had higher academic self-concepts than non-gifted groups, but reported no consistent differences on other facets of self-concept, including global self-esteem. More recently, Marsh et al. (1995) demonstrated a decline in academic self-concept scores of elementary-aged students who participated in gifted and talented programs, a decline that was not paralleled in nonacademic self-concept scores. In the studies that examined age and gender differences among gifted children (e.g., Lea-Wood and Clunies-Ross, 1995; Yong, 1992), no differences have been found.

Although many of the studies cited reported no significant differences in self-concept by gender and age, the studies that did report gender differences tended to find the same pattern of differences. For example, in all of the studies that reported significant gender differences, the difference consistently favored males on global, athletic, and physical self-concepts and females on verbal and some area of social self-concept. The pattern with age is less clear with some studies reporting higher self concepts for older individuals (e.g., Jackson et al., 1994) and others reporting higher self-concepts for younger participants (e.g., Crain & Bracken, 1994; Jackson et al., 1994).

The present study examined age and gender differences on global, academic, athletic and social self-concepts in a group of academically talented students. It was hypothesized that males would obtain significantly higher scores on athletic and global self-concepts and females would obtain higher scores on social self-concept. It was also hypothesized that significant differences would be found across age groups with older students having significantly higher scores (based on the literature on gifted students manifesting the big-fish little-pond effect (BFLPE) (Marsh et al., 1995), as older students were more likely to have been in the talent development program for a greater number of years.

With regard to the academic self-concept score, it was possible that males would obtain higher scores than females as the students were in mathematics and science classes, areas where females have traditionally been excluded (Kahle, 1983). On the other hand, researchers have reported finding no gender differences in achievement and motivation of academically talented students in a summer program, even though course enrollment occurred along traditional lines (Stocking & Goldstein, 1992), suggesting that girls who choose mathematics and science courses do not differ from boys in their perception of competence in these areas.

Method

Participants

The participants were 311 students (155 males and 156 females) with a mean age of 14.53 years. Participants' ages ranged from 12 to 18 years. All students were in grades 7 through 11 and were attending classes in mathematics, science, or computer science at a summer program for the academically talented at a major university in the San Francisco Bay Area. Acceptance into the program is based on a number of competitive criteria, including grade point average, achievement test scores, teacher recommendations, and an academic product. The mean grade point average of students in these classes was 3.62 with a skew of -3.2.

Measures

The study used two questionnaires: the Self-Perception Profile for Adolescents (SPPA) (Harter, 1988) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The SPPA is a 45-item

questionnaire with each item consisting of two contrasting descriptions (one more positively worded than the other) describing an adolescent. For each description, there are two alternative choices ("sort of true for me" and "really true for me"). The respondent reads both descriptions and chooses one of the two choices for one of the descriptions. For example, one item on the instrument contrasts teenagers who have a lot of friends with teenagers who do not have many friends. The respondents have to decide which of the two descriptions is most similar to themselves and then indicate in their choice ("sort of true for me" or "really true for me") how closely the description fits them. Positively and negatively worded descriptions are randomly distributed, and scoring is on a four-point scale. For scoring, items are re-coded so that higher numbers represent positive opinions of self. The 45 items make up nine subscales of five items each, one of which (Global Self Worth) is not included in the factor analysis of the instrument.

Exploratory factor analyses (Worrell, in press) revealed seven factors, three of which were used in this study. The three factors included athletic competence (consisting of Harter's original five items), scholastic competence (consisting of Harter's original five items and an additional item from the job competence subscale), and a factor labeled low peer support (which consisted of the ten items making up Harter's social competence and close friendship scales). This factor was labeled low peer support as all of the structure coefficients were negative and represented social self-concept in the study. The structure coefficients of all the items were |.57| or higher and Cronbach alpha reliability coefficients for the scores in this study were .76 (scholastic subscale), .89 (low peer Support subscale), and .91 (athletic subscale).

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used as a measure of global self-esteem. The Rosenberg consists of ten questions that are worded either positively or negatively and responses were scored on a four-point Likert scale. The Cronbach alpha reliability coefficient of the scores in this study was .88.

Procedure

Participants completed the SPPA and the Rosenberg anonymously as a part of their regular end of program course evaluation in the summer of 1995. Students completed the evaluation forms

on their own time and returned them to the classroom. As we were more interested in the domain-specific differences in self-concept scores and the three SPPA scores were significantly correlated with global self-esteem with Pearson-product moment correlation coefficients ranging from .27 to .54, a multivariate analysis of covariance (MANCOVA) was conducted with three dependent variables (athletic, scholastic, and social self-concept), two independent variables (gender and age group), and global self-esteem as the covariate. Participants' ages were re-coded into a four group categorical variable for the analyses: 13.5 or younger (n=74), over 13.5 to 14.5 years old (n=74), over 14.5 to 15.5 years olds (n=86), and over 15.5 years old (n=77). The SPSS program for personal computers (Norussis, 1994) was used to conduct all data analyses.

Results

A crosstabulation analysis of age groups by gender indicated that the eight cells did not differ significantly in number [$\underline{\chi}^2$ (3), = 3.94, $p > .05$]. Further, univariate and multivariate tests of homogeneity were not significant.

The MANCOVA revealed a significant main effect for gender but not for age group. The gender by age groups interaction was also not significant. As suggested by Huberty (1994) and Grimm and Yarnold (1995), descriptive discriminant analysis was used as a post-hoc procedure. Gender was the independent variable and the four self-concept measures were the predictors. The single discriminant function was significant [Wilks' Lambda = .8778, $\underline{\chi}^2$ (4) = 40.01, $p < .001$]. The proportion of correct classifications was 67.85% (see Figure 3) with equal numbers of males and females being classified. The standardized discriminant function coefficients, which are also reported in Table 1, indicate that global and athletic self-concepts had the highest positive correlations to the function (indicating that mean scores on these variables were higher in male participants) whereas social self-concept had a very high negative correlation to the function (indicating a higher female mean score on this variable). Scholastic self-concept did not contribute to the function.

Mean scores by age group and gender are presented in Tables 2 and 3 respectively, and these scores are presented graphically in Figures 1 and 2. As the Table 3 indicates, the differences between males and females did not exceed one half of the standard deviation of the scores.

Discussion

This study examined age and gender differences in global, general academic, athletic, and social self-concepts in an academically talented sample of adolescents. No age differences were found on any variables, and there were no gender differences on academic self-concept. However, males outscored females on athletic and global self-concept and females outscored males on social self-concept. Although these gender differences were statistically significant and allowed for group classification 17% above chance levels, the differences were very small and all were less than one half of a standard deviation.

The results of this study provide some support for previous findings with regard to gender. The evidence seems to suggest that there are differences in some domain specific areas of self-concept that favor males (e.g., athletic, global) and other areas that favor females (e.g., social), but the differences are very small and are probably not useful as predictors outside of large samples. As with many other studies, no age differences were found, but this study examined age-differences cross-sectionally, not longitudinally.

It was hypothesized that younger ages might have lower academic self-concept than older students as the former were more likely to be new to the program and might manifest the BFLPE (Marsh et al., 1995). However, this hypothesis was not supported. Two possible reasons for the lack of findings in this area include 1) the students' end of program scores were not compared to their scores prior to entering the program, and 2) there was no way of knowing if the percentage of returning respondents in the older groups actually outnumbered the percentage of returning respondents in the younger groups. Lack of gender differences on academic self-concept may also be the result of using a global academic measure rather than mathematics and science self-concept scales. Future research needs to examine the BFLPE in groups that are pre-identified as new and returning, and should also follow the students who are new entrants in gifted programs to see if their academic self-concept rebounds after acclimating to the gifted comparison group.

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Table 1

Prediction of Gender Groups using Self-Concept Variables

		PREDICTED GROUP MEMBERSHIP	
ACTUAL GROUP	N	Male	Female
Male	155	104 67.1%	51 32.9%
Female	156	49 31.4%	107 68.6%

Percent of cases classified correctly: 67.85%

Variables	Standardized coefficients
Social self-concept	-.9136*
Athletic self-concept	.6689*
Global self-concept	.6539*
Scholastic self-concept	-.0072

* Significant contributor to function

Table 2

Self-Concept Differences in Means by Age Group[1]

Age Groups	< 13.6	13.6 - 14.5	14.6 - 15.5	> 15.5
Athletic Self-Concept	2.75 (.76)	2.55 (.86)	2.92 (.80)	2.41 (.79)
Scholastic Self-Concept	3.31 (.62)	3.23 (.54)	3.31 (.55)	3.18 (.58)
Social Self-Concept	3.14 (.68)	2.98 (.55)	3.11 (.68)	2.96 (.65)
Global Self-Esteem	3.36 (.48)	3.21 (.51)	3.30 (.50)	3.14 (.43)

[1] - Standard deviations in parentheses

Table 3

Self-Concept Differences in Means by Gender[1]

	Male	Female	Difference	Total
Athletic Self-Concept	2.83 (.80)	2.50 (.82)	.33	2.66
Scholastic Self-Concept	3.27 (.56)	3.25 (.59)	.02	3.26
Social Self-Concept	2.95 (.65)	3.15 (.63)	-.20	3.05
Global Self-Esteem	3.33 (.48)	3.18 (.51)	.15	3.26

[1] - Standard deviations in parentheses

Figure 1

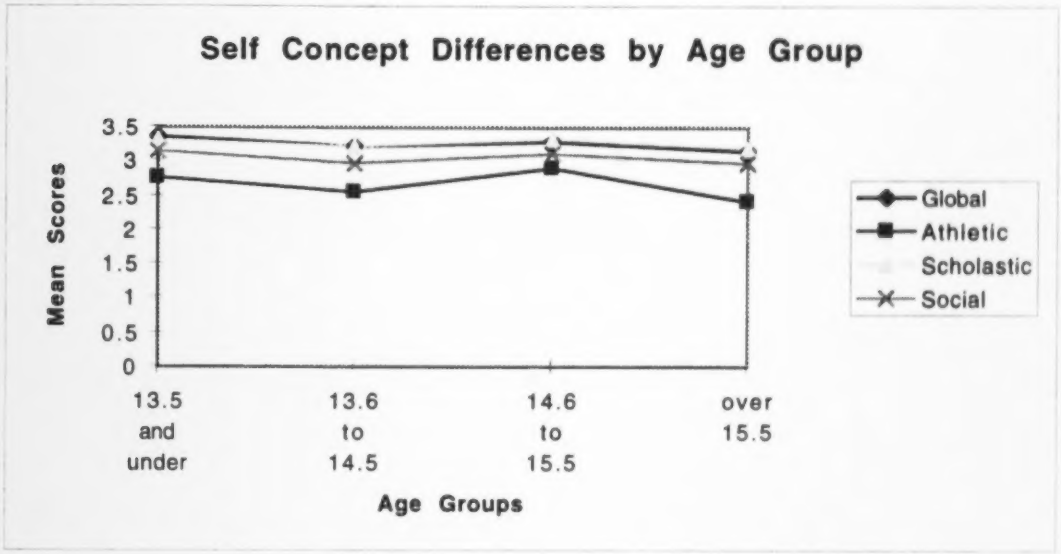

Figure 2